Missed Opportunities for Prevention: Smoking Cessation Counseling and the Competing Demands of Practice

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BACKGROUND. Smoking cessation advice is an effective intervention for the control of tobacco use. The objective of this study was to assess and describe the rates of smoking status assessment and smoking cessation advice provided by physicians during ambulatory office visits with respect to physician specialty, type of visit, and number of problems addressed at the visit.

METHODS. We used a cross-sectional survey of patient visits to the offices of nonfederally employed, office-based physicians participating in the 1992 National Ambulatory Medical Care Survey (n=1558).

RESULTS. Physicians reported knowing the smoking status of their patients in 66% of outpatient visits. The rate of assessment was similar for generalists and specialists. Cardiologists and generalists, except for pediatricians, showed discernible rates of smoking cessation advice (medians ranging from 14% to 50%), whereas obstetrician/gynecologists and other specialists had negligible rates. For tobacco-related visits, generalists and specialists had comparable rates of cessation advice to identified smokers. For non–tobacco-related visits, generalists had higher rates than specialists (22% vs 10%; $P < .001$).

CONCLUSIONS. Although a substantial majority of smokers are reportedly identified by physicians during ambulatory visits, a large number of identified smokers are not receiving smoking cessation counseling. Patients seen by generalists are more likely to receive smoking cessation advice. Physicians appear to prioritize smoking cessation advice based on diagnosis at the time of the visit.

KEY WORDS. Physician practice patterns; smoking cessation; physicians, family; primary health care. *(J Fam Pract 1997; 45:348-354)*

As providers of ongoing medical care, physicians see about 70% of the smokers in the United States during the course of each year.[1] These medical encounters present excellent opportunities for physicians to deliver smoking cessation advice to their patients who smoke. Physician counseling for tobacco cessation has been shown to be an effective intervention. A meta-analysis of seven clinical trials showed that advice from a physician, lasting 3 minutes or less, had a significant effect on patients' use of tobacco (odds ratio [OR], 1.3; confidence interval [CI], 1.1 to 1.6).[2-9] The benefits of smoking cessation do not diminish with age and extend to individuals already afflicted with smoking-related diagnoses.[10] In the prevention of premature morbidity and mortality, tobacco cessation advice is the most important service clinicians can

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offer their patients who smoke.[2,11]

Many other demands compete with smoking cessation counseling for the limited time available for medical encounters.[12] Demands that are often perceived as more urgent if not more important than cessation counseling include acute care for presenting complaints, responding to patient requests and expectations, providing care for chronic illnesses, addressing psychosocial problems, screening for asymptomatic disease, performing other preventive services, and completing paperwork. These demands are likely to manifest differently depending on the type of visit and the medical diagnoses of the patients seen.[13,14]

There is evidence that clinicians base their choice of preventive services on the type of visit an eligible smoker makes. For example, a study using case scenarios[13] found that physicians' intention to offer smoking cessation advice was higher during visits for well care than during those for illness care. The study suggested but was unable to prove that physicians would be more likely to provide smoking cessation counseling during visits for smoking-related illnesses. Similarly, McBride and colleagues[14] found that patients with coronary heart disease or its risk factors were more likely to receive smoking cessation services from primary care physicians.

Preventive services guidelines are often targeted to primary care clinicians,[2,11] even though only one half of office visits to physicians in the United States are to generalist physicians, ie, family physicians, general practitioners, general internists, and general pediatricians.[15] The other one half of office visits include those to subspecialists, many of whom do not have specific training in primary care. Visits to nonprimary care clinicians represent additional opportunities for smoking cessation counseling.

Our study was undertaken to increase understanding of the opportunities for physician counseling of smokers by: (1) describing the rate at which physicians report being aware of their patients' smoking status, and (2) describing the incidence of smoking cessation advice among identified smokers. These rates were compared by physician specialty, by type of diagnoses, ie, acute or chronic illnesses related to tobacco or non–tobacco-related illnesses, and by the number of problems addressed during the visits.

METHODS

The 1992 National Ambulatory Medical Care Survey (NAMCS) provides data on patient encounters from a United States national sample of office-based physicians. All ambulatory care visits by patients at least 13 years old were included (unweighted sample size = 30,039 office visits). Major types of ambulatory encounters excluded from the 1992 NAMCS were those made by telephone, those outside of the physician's office, and those made in hospital or institutional settings.[16]

The NAMCS uses a multistage probability sample that involves primary sampling units (PSUs), physician practices within PSUs, and patient visits within the annual practices of sample physicians. A PSU is a county, a group of adjacent counties, or a standard metropolitan statistical area (SMSA). Within each PSU, practicing physicians are selected from the master files of the American Medical Association and the American Osteopathic Association. The sampling frame for NAMCS excludes specialists in anesthesiology, radiology, and pathology.[16]

For the current study, physicians, aided by their staffs, collected information using two data-collection forms: the patient log and the NAMCS patient record. The patient log sequentially listed patients seen in the physicians' offices during the assigned reporting week. Physicians were instructed to complete patient records after each visit (median of 22 patient visits per physician). Patient records contained specific questions about cigarette smoking status, therapeutic services including smoking cessation counseling, International Classification of Diseases (ICD9-CM) diagnostic codes, and number of problems addressed during the visit.

For this study, we determined smoking assessment from the smoking status of each encounter in our sample of NAMCS patient visits. If smoking status was coded as "undetermined," we coded "no smoking assessment." The data fields did not allow for separating the encounters in which smoking status was unknown from those in which the question about smoking status was unanswered. The incidence of smoking cessation advice was calculated as the number of smokers identified by a physician as having received smoking cessation counseling, divided by the total number of identified smokers seen by each physician.

We used physicians as our unit of analysis. For

each physician, we calculated an incidence rate of assessment and cessation advice, taking into account all visits for which information was available. The incidence of smoking status knowledge and that of smoking cessation advice provided were reported separately for family physicians, general internists, general pediatricians, general practitioners, obstetrician/gynecologists, cardiologists, and all other physician specialists. We hypothesized that cardiologists would have higher rates of cessation advice than any other physician group, since they see a population at uniformly high risk for smoking-related illness. We hypothesized that obstetrician/gynecologists would have a lower incidence of cessation advice than would generalists. Our analyses included "box-and-whisker" analysis,* descriptive statistics, and bivariate analysis from the Statistical Package for the Social Sciences (SPSS Inc, Chicago, Ill).

All visits were classified as either tobacco-related or non–tobacco-related. Visits by patients presenting with acute symptoms related to the respiratory system were clustered based on ICD-9-CM codes.[17] Clusters included upper respiratory infection, otitis media, acute lower respiratory tract infection, and sinusitis. These visits were labeled acute illness related to tobacco. For chronic-illness visits, nine clusters were selected to represent tobacco-related conditions and diseases that worsen with cigarette use: hypertension, ischemic heart disease, diabetes mellitus, asthma, chronic obstructive pulmonary disease, cerebral vascular disease, congestive heart failure, thrombophlebitis, and general arteriosclerosis.

For the analysis by type of visit and number of problems addressed, family physicians, general internists, general pediatricians, and general practitioners were grouped as generalists, and all others were grouped as specialists. We used *t* tests to compare the smoking advice counseling rates for generalists and specialists for each of the visit types: acute illness related to tobacco, chronic illness related to tobacco, and other, ie, non–tobacco-related. We also used *t* tests to compare these rates by the number of problems addressed during the visits: at least one, two, and three or more.

RESULTS

Of the 30,059 visits reported in the NAMCS, smoking status was not specified in 10,291 (34%) of visits. Among the 19,768 visits for which smoking status was known, 3699 (19%) smokers were identified. A total of 591 (16%) of the identified smokers received smoking cessation advice. The average duration of visits was 20.8 minutes (standard deviation [SD], 15.4; median, 15 minutes). Patients in 37% of the visits had private or commercial insurance; 26% had Medicare; 18% were self-paid; 16% participated in a health maintenance organization (HMO); and 7% used Medicaid. These percentages add to more than 100 because some individuals had more than one source of payment.

Of the 1558 physicians selected for the study, 1283 (82%) were included in our analyses; 266 (17%) did not see patients during the period of observation; and 9 (<1%) did not see patients 13 years old or older. Of the 1283 physicians, 915 (71%) identified smokers among their patient sample, 182 (14.2%) reported the smoking status of some of their patients but did not identify any smokers, and 99 (8%) did not report the smoking status of any of their patients. Among physicians having encounters with identified smokers, 55 (6%) were family physicians, 67 (7%) were general practitioners, 64 (7%) were general internists, 13 (1%) were general pediatricians, 53 (5%) were obstetrician/gynecologists, 40 (4%) were cardiologists, and 623 (68%) reported other specialties.

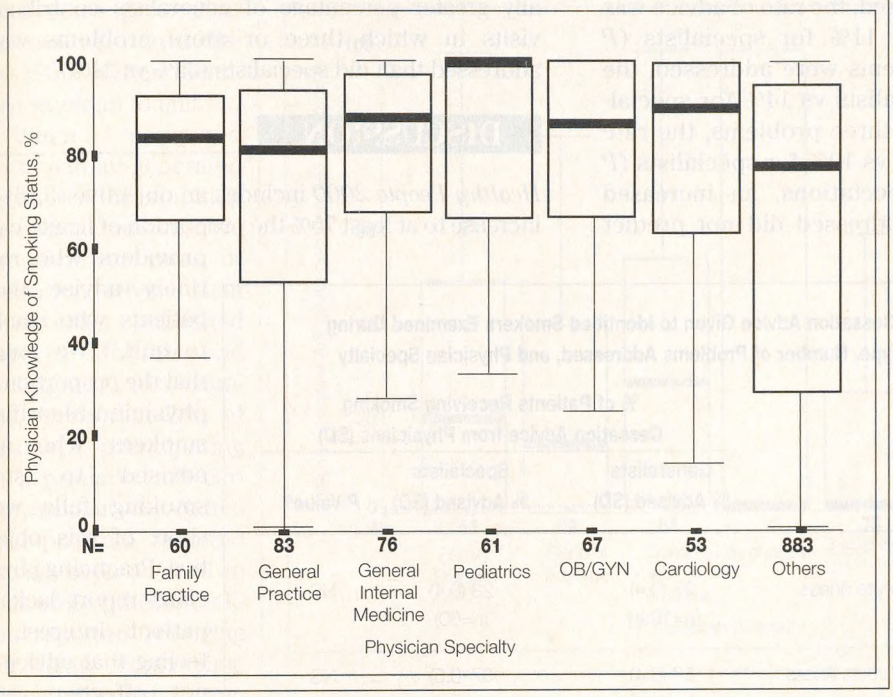
Figure 1 shows rates of physicians' reported awareness of patients' smoking status, by specialty. A comparison of these rates demonstrates relatively high levels overall of physician assessment of patient smoking status. There was wide variability within specialties but little variability between generalists and obstetrician/gynecologists. Family physicians reported rates of smoking status awareness ranging from 6% to 100% with a median (interquartile range) of 84% (66% to 93%). General practitioners' rates ranged from 0% to 100% with a median (interquartile range) of 81% (53% to 93%). General internists' rates ranged from 0% to 100% with a median (interquartile range) of 88% (67% to 97%). Pediatricians' rates ranged from 0% to 100% with a median (interquartile range) of 100% (66% to 100%). Obstetrician-gynecol-

*A "box-and-whisker" plot displays summary statistics. (See Figures 1 and 2). The lower boundary of the box is the 25th percentile and the upper boundary is the 75th percentile. The horizontal line inside the box represents the median. Fifty percent of the cases have values within the box. The largest and smallest observed values that are not outliers are shown by whiskers drawn at the ends of the box.

FIGURE 1

Rates of physician knowledge of smoking status for patients ≥13 years old seen during outpatient visits, by physician specialty. The upper and lower boundaries of the rectangular box indicate 75% and 25%, respectively; lines (whiskers) at upper and lower boundaries indicate nonoutlier maximum and minimum, respectively; and thick bold lines indicate medians.

Source: National Ambulatory Medical Care Survey, 1992.[16]



ogists rates ranged from 3% to 100% with a median (interquartile range) of 87% (67% to 87%). Cardiologists' rates ranged from 3% to 100% with a median (interquartile range) of 90% (63% to 90%). The rates for all other specialists ranged from 0% to 100% with a median (interquartile range) of 78% (30% to 95%). As expected, cardiologists reported the highest rates of smoking status knowledge. The rates for pediatricians are high, but the number of pediatricians included in this survey (n=13) is too small to make generalizations about the specialty.

Figure 2 shows the rates of physician-reported smoking cessation advice provided to identified smokers, by specialty. Rates ranged from 0% to 100% for all specialty groups. Cardiologists and generalists, excluding pediatricians, showed discernible rates of smoking cessation advice. As predicted, cardiologists had the highest rate of smoking cessation advice provided to identified smokers, with a median (interquartile range) of 50% (0% to 86%). For family physicians, the advice rates had a median (interquartile range) of 20% (0% to 50%); for general practitioners, 14% (0 to 40%); for general internists, 28% (0% to 56%), and for pediatricians, 0% (0% to 100%). The rate for pediatricians again should be interpreted with caution in view of the small number of physicians included.

Obstetrician/gynecologists and all other specialty groups had negligible rates of smoking cessation advice. The rate was so low that our figure did not show any effect. The median (interquartile range) for obstetrician/gynecologists was 0% (0% to 27%); for all other specialty groups, it was 0% (0% to 0%).[1]

Rates of physician-reported smoking cessation advice are presented in the table, by visit type and by the number of problems addressed during the visits, and grouped by physician specialty. When specialists provided care for patients whose visits included tobacco-related diagnoses, their rate of cessation advice was the same as that of generalists, although the proportion of specialists contributing visits to these categories was small. During visits for tobacco-related acute illnesses, the cessation advice rate was similar for generalists and specialists (27% vs 23%; *P*=NS). Only 8.4% (60 of 716) of eligible specialists reported tobacco-related visits for acute illness, compared with 54.7% of generalists (109 of 199).

The rates of smoking cessation advice for chronic illness visits related to tobacco were identical (37%) for generalists and specialists. Sixteen percent of specialists and 56% of generalists contributed visits to this category. For all other non–tobacco-related visits, generalists had higher rates of smoking cessation advice than did specialists (22% vs 10%; $P < .001$).

The table also shows rates of cessation advice by number of problems addressed during the visit grouped by physician specialty. The generalists' rates of smoking cessation advice were higher than those of specialists, regardless of the number of problems addressed during the visit. When at least one problem was addressed, the rate of advice was 29% for generalists vs 11% for specialists (P <.001); when two problems were addressed, the rate was 27% for generalists vs 14% for specialists (P<.001); and with three problems, the rate was 31% for generalists vs 19% for specialists (P =.03). Contrary to expectations, an increased number of problems addressed did not predict lower rates of cessation advice.

An almost identical proportion of visits to generalists and specialists were for only one problem (84% vs 85%). A higher proportion of visits to generalists than to specialists (69% vs 48%) were for the purpose of addressing two problems. A proportionally greater percentage of generalists contributed visits in which three or more problems were addressed than did specialists (35% vs 24%).

DISCUSSION

Healthy People 2000 includes an objective (3.16) to increase to at least 75% the proportion of health care providers who routinely advise their patients who smoke to quit.[18] We found that the proportion of physician-identified smokers who are advised to stop smoking falls well short of this objective. Practicing physicians report lack of patient interest, a feeling that advice is not effective, and lack of available time to give advice as barriers to smoking cessation counseling.[19] Since we do not know the extent of smoking cessation advice in terms of intensity or duration, there is clearly a need for studies to validate the intensity and content of smoking cessation advice in practice. Since physicians recorded whether they had provided smoking cessation counseling after each encounter, the numbers in this

TABLE

Mean Incidence of Smoking Cessation Advice Given to Identified Smokers Examined During Office-based Visits, by Visit Type, Number of Problems Addressed, and Physician Specialty

Variable	% of Patients Receiving Smoking Cessation Advice from Physicians (SD)		
	Generalists % Advised (SD)	Specialists % Advised (SD)	*P* Value*
Visit type			
Tobacco-related visits for acute illness	27 (0.4) (n=109)†	23 (0.4) (n=60)	NS
Tobacco-related visits for chronic illness	37 (0.4) (n=111)	37 (0.5) (n=114)	NS
All other non–tobacco-related visits	22 (0.3) (n=171)	10 (0.3) (n=679)	<.001
No. of problems addressed			
At least one problem	29 (0.4) (n=168)	11 (0.3) (n=608)	<.001
Two problems	27 (0.4) (n=138)	14 (0.3) (n=348)	<.001
Three or more problems	31 (0.4) (n=69)	19 (0.4) (n=173)	.03

* *P* values derived from *t* test comparisons
†n refers to the number of physicians contributing observations to a category.
SD denotes standard deviation.
Source: National Ambulatory Medical Care Survey, 1992.[16]

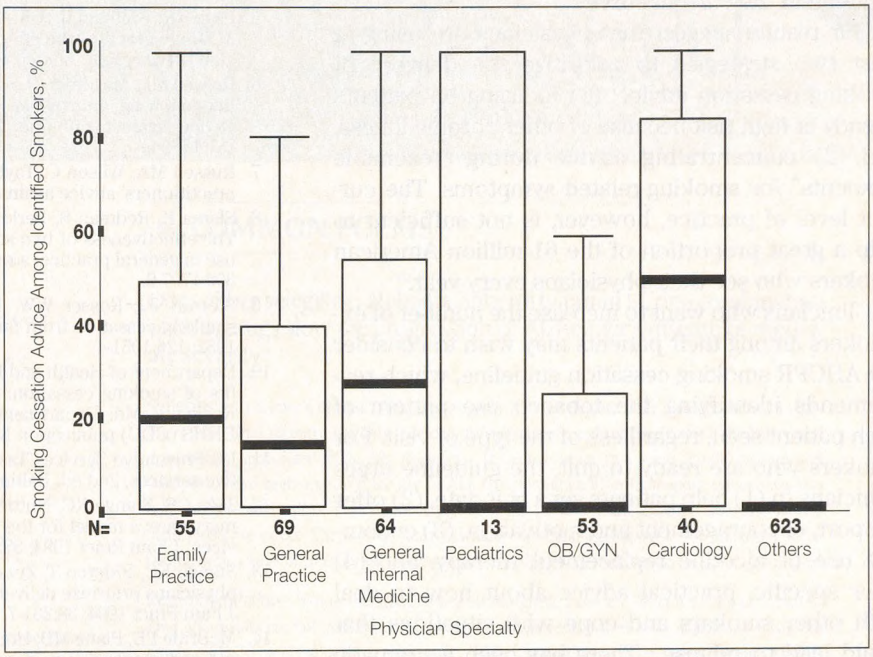
study may overestimate actual practice because the data collection form may have served as a reminder. It is encouraging, however, that at least some generalists in this study were advising 100% of their identified smokers to quit.

When compared with patient-generated estimates of smoking cessation advice, we found lower rates of cessation advice than have other published reports. McBride and colleagues,[14] for example, found that 78% of smokers participating in a primary care cardiovascular risk-reduction program reported having been advised to quit; 16% of these smokers reported receiving physician counseling. Using information from the 1992 National Health Interview Survey, Tomar and associates[1] reported that 51% of current smokers had been advised by their physician to quit smoking during the preceding year.

FIGURE 2

Rates of smoking cessation advice provided to identified smokers ≥13 years old seen during outpatient visits, by physician specialty: The upper and lower boundaries of the rectangular box indicate 75% and 25%, respectively; line (whisker) at upper and lower boundaries indicate nonoutlier maximum and minimum, respectively; and thick bold lines indicate medians.

Source: National Ambulatory Medical Care Survey, 1992.



In its recently released monograph about primary care,[20] the Institute of Medicine recommends studies of specialists who provide primary care, an important aspect of which is smoking cessation counseling. In this study, we found that generalists and specialists provide comparable levels of smoking cessation counseling during visits for tobacco-related illnesses. For visits that are not related to tobacco and for those during which multiple problems are addressed, however, generalists provide smoking cessation ad-vice at higher rates than subspecialists. This finding highlights a benefit of primary care for patients who smoke. It also points to the need to encourage the development of systems to identify smokers and remind subspecialists to offer tobacco cessation advice to identified patients. Smoking cessation efforts require that all health care professionals fight nicotine addiction. Evidence from the Agency for Health Care Policy and Research (AHCPR) smoking cessation guideline demonstrates that all clinicians can have an effect on patients quitting smoking.[2]

Contrary to our prediction, we did not find that patients seen by generalists for multiple problems were less likely to receive smoking cessation advice. It is possible that the number of problems addressed during a visit is not a good proxy for competing demands in practice. The high rate of tobacco use ascertained by physicians and the high rate of counseling by some physicians also imply that highly motivated physicians find ways to incorporate tobacco counseling despite the competing demands of multiple-problem visits.

The calculated prevalence of cigarette smoking among patients with known smoking status observed during this study (19%) was lower than the prevalence in a 1993 survey of the general population of smokers (aged ≥12 years).[21] This finding prob-

ably represents physicians' lack of recognition of tobacco use in their patient populations. Since cigarette use is more prevalent among the poor,[21] this finding may also represent the higher smoking rate of poor patients seen in hospital clinics and reported in the 1993 study. This patient population was not included in the current survey.

Our results suggest that physicians are using at least two strategies to prioritize the delivery of smoking cessation advice: (1) focusing on patients already at high risk because of other chronic illness, and (2) concentrating advice during "teachable moments" for smoking-related symptoms. The current level of practice, however, is not sufficient to help a great proportion of the 61 million American smokers who see their physicians every year.[22]

Clinicians who want to increase the number of ex-smokers among their patients may wish to consider the AHCPR smoking cessation guideline, which recommends identifying the tobacco use pattern of each patient seen, regardless of the type of visit. For smokers who are ready to quit, the guideline urges clinicians to (1) help patients set a quit date, (2) offer support, encouragement and motivation, (3) encourage use of nicotine replacement therapy, and (4) offer specific, practical advice about how to deal with other smokers and cope with situations that could lead to relapse.[2] There has been a dramatic increase in sales of nicotine replacement products since they were reclassified as nonprescription in June 1996. The role of clinicians as a source of nicotine replacement therapies has decreased because of this change, but patients still need support and follow-up from clinicians in their efforts to quit smoking. Although much tobacco cessation advice is being offered, outpatient visits represent a great and only partially tapped opportunity for smoking intervention by physicians.

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